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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/986,656	11/09/2001	Juichiro Ukon	103120-00027	5596
4372	7590	09/24/2004	EXAMINER	
ARENT FOX KINTNER PLOTKIN & KAHN 1050 CONNECTICUT AVENUE, N.W. SUITE 400 WASHINGTON, DC 20036			GEISEL, KARA E	
			ART UNIT	PAPER NUMBER
			2877	

DATE MAILED: 09/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/986,656

Applicant(s)

UKON ET AL.

Examiner

Kara E Geisel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 20-43 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 20, 21, 23-29, 31-34, 36, 38 and 40 is/are rejected.
- 7) ☒ Claim(s) 22, 30, 35, 37, 39 and 41-43 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>1101</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Preliminary Amendment***

The preliminary amendment filed on November 9<sup>th</sup>, 2001, has been entered into this application.

### ***Information Disclosure Statement***

The information disclosure statement filed on November 9<sup>th</sup>, 2001, has been considered by the examiner.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 23-26, 27/(23, 24, 26), 28/(23), 31/(23-26), and 32/(23-26) are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In regards to claim 23, it is unclear, since there is no "and" or "or" in line 2, whether applicant is claiming that all or only one of the intensity images, intensity contour, color contour, intensity outline, and time base fluctuation are obtained.

Claims, which are dependent from claim(s) 23 inherit the problems of these claim(s), and are therefore also rejected under 35 U.S.C. 112, second paragraph.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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Claims 20-21, 23, 24, 27/(20, 23, 24), 28-29, 33-34, 36, 38, and 40/(33-34, 36, 38) are rejected under 35 U.S.C. 102(b) as being anticipated by Sohma et al. (USPN 4,820,046).

In regards to claim 20, Sohma discloses a method for monitoring and/or controlling the status of a plasma in a plasma spectrometer (columns 2-3, lines 66-67 and 1-3 respectively, and column 4, lines 15-26), comprising acquiring image data of the plasma (column 5, lines 22-27), and at least one of displaying an image of the plasma from the image data on a display device (column 6, lines 4-6), and storing the image data in a computer unit along with measured data.

In regards to claim 21, the spectrometer is an optical emissions spectrometer (column 6, lines 49-59).

In regards to claim 23, the image data are processed to obtain intensity images and compared with a plasma optimal condition data set (column 9, lines 4-15).

In regards to claim 24, the spectrometer is an optical emissions spectrometer (column 6, lines 49-59).

In regards to claims 27/(20, 23, 24) and 28, it would be up to the user to decide whether to image the plasma radially oriented or axially oriented.

In regards to claim 29, the spectrometer is an optical emission spectrometer (column 6, lines 49-59).

In regards to claim 33, Sohma discloses a plasma spectrometer (columns 2-3, lines 66-67 and 1-3 respectively, and column 4, lines 15-26), comprising a video-camera (fig. 5, 8) fixed on an enclosure of a plasma generating device (35), said video-camera being coupled to at least one of a display device (37) and a computer unit (38) for displaying and/or storing plasma image data obtained through the video-camera.

In regards to claims 34 and 38, it would be up to the user to decide whether to image the plasma radially oriented or axially oriented.

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In regards to claim 36, the video camera is axially positioned with regard to the optical axis of the spectrometer (fig. 5).

In regards to claim 40/(33-34, 36, 38), the spectrometer is an optical emission spectrometer (column 6, lines 49-59).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 32/(20-21, 23-24) is rejected under 35 U.S.C. 103(a) as being unpatentable over Sohma et al. (USPN 4,820,046) in view of Drummond et al. (USPN 5,050,992).

In regards to claim 32/(20-21, 23-24), Sohma discloses a method for monitoring and/or controlling the status of plasma in a plasma spectrometer. It is not disclosed that the display device and the computer unit are located remotely from the spectrometer. However, it is very well known in the art to locate a display and computer away from a spectrometer via optical fibers, in order to keep the display

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and computer from being damaged due to the environment that the spectrometer is in, such as a highly corrosive or high temperature environment.

For example, Drummond broadly teaches locating a display and computer away from a spectrometer (column 3, lines 59-67). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to locate a display and computer away from a spectrometer via optical fibers, in order to keep the display and computer from being damaged due to the environment that the spectrometer is in, such as a highly corrosive or high temperature environment.

*Allowable Subject Matter*

Claims 22, 30, 31/(20-22), 32/(22), 35, 37, 39, 40/(35, 37) and 41-43 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 25-26, 27/(26), 31/(23-26), and 32/(25-26) would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

As to claims 22, 25, and 30 the prior art of record, taken alone or in combination, fails to disclose or render obvious a method for monitoring and/or controlling the status of plasma in a plasma spectrometer wherein the spectrometer is a mass spectrometer, in combination with the rest of the limitations of claims 22, 25 and 30.

As to claim 26, the prior art of record, taken alone or in combination, fails to disclose or render obvious a method for monitoring and/or controlling the status of plasma in a plasma spectrometer wherein the spectrometer image data of a spectrometer entrance slit are acquired, and an image of the entrance slit is displayed from the acquired entrance slit image data on the display simultaneously with the plasma

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image and/or the acquired entrance slit image data are stored in the computer unit simultaneously with the plasma image data, in combination with the rest of the limitations of claim 26.

As to claim 31, the prior art of record, taken alone or in combination, fails to disclose or render obvious a method for monitoring and/or controlling the status of plasma in a plasma spectrometer comprising acquiring plasma sound data on the display device and/or storing plasma sound data in the computer unit, in combination with the rest of the limitations of claim 31.

As to claim 35, the prior art of record, taken alone or in combination, fails to disclose or render obvious a plasma spectrometer wherein image data of an entrance slit of a detector device of the spectrometer are simultaneously obtained with the plasma image data through the video-camera, in combination with the rest of the limitations of claim 35.

As to claim 39, the prior art of record, taken alone or in combination, fails to disclose or render obvious a plasma spectrometer wherein the video camera is perpendicularly oriented with regard to the optical axis of the spectrometer, in combination with the rest of the limitations of claim 39.

As to claim 41, the prior art of record, taken alone or in combination, fails to disclose or render obvious a plasma spectrometer wherein the spectrometer is a mass spectrometer, in combination with the rest of the limitations of claim 41.

As to claims 42-43, the prior art of record, taken alone or in combination, fails to disclose or render obvious a plasma spectrometer comprising a microphone fixed on the enclosure of the plasma generating device for acquiring plasma sound data, the microphone being coupled to the computer unit for storing and/or processing of the plasma sound data, in combination with the rest of the limitations of claims 42-43.

#### ***Additional Prior Art***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art made of record is Krupa et al. (USPN 5,642,190).


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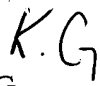
Krupa discloses a method for monitoring and/or controlling the status of a plasma comprising, acquiring image data of the plasma both axially and radially, and displaying an image of the plasma from the image data on a display device and storing the image data in a computer unit.

*Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kara E Geisel whose telephone number is **571 272 2416**. The examiner can normally be reached on Monday through Friday, 8am to 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on **571 272 2800 ext. 77**. The fax phone numbers for the organization where this application or proceeding is assigned are 703 872 9306 for regular communications and 703 872 9306 for After Final communications.

  
F.L. Evans  
Primary Examiner  
Art Unit 2877

  
KEG  
September 15, 2004